



Line2PDF Plus User’s Guide

Version 1.4.3

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For information not in this manual, refer to the Help System in your product.





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## 1 Overview

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# Introduction

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## Important

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To the maximum extent permitted by applicable laws, in no event will the manufacturer be liable for any damages whatsoever arising out of failures of this product, losses of documents or data, or the use or non-use of this product and operation manuals provided with it.

Make sure that you always copy or have backups of important documents or data. Documents or data might be erased due to your operational errors or malfunctions of the software. Also, you are responsible for taking protective measures against computer viruses, worms, and other harmful software.

In no event will the manufacturer be responsible for any documents created by you using this product or any results from the data executed by you.

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## Cautions regarding this guide

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- Some illustrations or explanations in this guide could differ from your product due to improvement or change in the product.
- The contents of this document are subject to change without notice.
- No part of this document may be duplicated, replicated, reproduced in any form, modified, or quoted without prior consent of the supplier.

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## Publications for RICOH Transforms Suite

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This section provides a list of all the publications for RICOH Transforms Suite.

### Instruction manuals

- **AFP2PDF PLUS**

For information about AFP2PDF PLUS, see these documents:

- *AFP2PDF Plus User Guide*
- *AFP2PDF Plus Quick Start Guide*
- *AFP2PDF Plus Setup Guide*
- *AFP2PDF Plus Release Notes*
- *AFP2PDF Plus - Summary of Updates*

- **AFP Visual Environment**

For information about AFP Visual Environment, see these documents:

- *AFP Visual Environment User Guide*
- *AFP Visual Environment Release Notes*

- **AFPMerge**

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For information about AFPMerge, see these documents:

- *AFPMerge User Guide*
- *AFPMerge Release Notes*

- **Line2PDF Plus**

For information about Line2PDF Plus, see these documents:

- *Line2PDF Plus User's Guide*
- *Line2PDF Release Notes*

- **PCL2PDF**

For information about PCL2PDF, see these documents:

- *PCL2PDF User's Guide*
- *PCL2PDF Release Notes*

- **PS2PDF**

For information about PS2PDF, see these documents:

- *PS2PDF User's Guide*
- *PS2PDF Release Notes*

- **Tiff2PDF**

For information about Tiff2PDF, see these documents:

- *Tiff2PDF Plus User Guide*
- *Tiff2PDF Plus Release Notes*

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## Symbols

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The following symbols are used in this manual to help you to identify content quickly.

### ★ Important

- This symbol indicates points to pay attention to when using the product. Be sure to read these explanations.

### ↓ Note

- This symbol indicates helpful supplementary information that is not essential to completing a task.

#### **Bold**

**Bold type** indicates the names of commands and parameters.

#### **Bold underline**

**Underlined bold type** indicates the default value.

#### *Italic*

*Italic type* indicates variables that you must replace with your own information.

#### Monospace

Monospace type indicates computer input and output and file names.

#### [ ]

Square brackets indicate that a value is optional.

---

|     |                                                   |
|-----|---------------------------------------------------|
|     | A vertical bar indicates a choice between values. |
| ... | An ellipsis indicates that a series can continue. |

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## Abbreviations

---

### ANSI

American National Standards Institute

### API

Application Programming Interface

### ASCII

American Standard Code For Information Interchange

### CC

Carriage Control

### CMOD

Content Manager OnDemand

### DBCS

Double Byte Character Set

### EBCDIC

Extended binary-coded decimal interchange code

### PDF

Portable Document Format

### TRC

Table Reference Character

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## Trademarks

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- z/OS

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The proper names of the Windows operating systems are as follows:

- Windows 10:
  - Microsoft Windows 10 Pro
  - Microsoft Windows 10 Enterprise
- Windows Server 2016:
  - Microsoft Windows Server 2016 Standard



# 1. Overview

- **Benefits**
- **Requirements**
- **Limitations**

The Line2PDF Plus Transform converts simple line data into Adobe Acrobat Portable Document Format (PDF) files. The text is quickly transformed and displayed on the screen.

It handles both ASCII and EBCDIC and ANSI and machine carriage control. You interact with Line2PDF Plus through a command line or JAVA API interface.

The Line2PDF Plus transform lets you:

- Integrate multiple servers with little or no client workstation modification. The Line2PDF Plus transform runs on your web server or other back-end application server.
- View documents with the same fidelity as if they were printed. If the Adobe Acrobat plug-in is installed with a web browser, you can view and print these documents within the browser application.
- Fully integrate with the IBM Content Manager OnDemand (CMOD) Web Enablement Kit and IBM Content Navigator.

## Benefits

The Line2PDF Plus Transform gives you these added benefits:

- Client / Server implementation.
- Greatly improved transformation speed over Line2PDF .
- Larger than 2 GB input and output file support.
- Reduce costs associated with printing and mailing by delivering documents electronically.
- Quickly retrieve your information within multi-page documents using Adobe Acrobat search and navigation features.
- Print Line2PDF Plus Transform documents on any local printer using the print function in Adobe Acrobat.

## Requirements

### Transform client requirements:

IBM AIX 7.2 or later

IBM z/OS UNIX System Services V1.13 or later

Microsoft Windows 10 Pro, Enterprise

Microsoft Windows 11 Pro

Microsoft Windows Server 2016 Standard

Microsoft Windows Server 2019 Standard

Microsoft Windows Server 2022 Standard

Linux Kernel 2.6.18 or later (x86)

Linux Kernel 2.6.09 or later (IBM System z)

**Transform server requirements:**

JAVA 64bit V1.8 or later

**End-user client requirements:**

Adobe Acrobat, Acrobat Reader, or Acrobat Plug-In 9.0 or later

When you install Line2PDF Plus you must have administrative rights.

**Limitations**

The current limitations with the Line2PDF PlusTransform include:

- Input text data stream must be mappable to code page 1252. Double Byte Character Set (DBCS) is not supported.
- TRC characters are not supported.
- Running Line2PDF Plus using IBM Semeru Java on Windows and Linux is not supported.

## 2. Installing the Line2PDF Transform

- Installing Line2PDF Plus using the installer
- Installing a Permanent License
- Revoking the License Key

### Installing Line2PDF Plus using the installer

The Line2PDF Plus transforms can now be installed using an executable jar file.

To run the installer, perform these steps:

- Use the following command: `java -jar RTS--setupLine2pdfPlus-1.X.X--line2pdfplus.jar`, where `1.X.X` is the transform version.

#### ↓ Note

- To install the Line2PDF Plus transform, you need 64 bit Java 1.8 or later and administrative rights.
- On some Java versions, due to a bug, the above `java -jar` command might not start the installer. Use this additional parameter: `java -Djdk.util.zip.disableZip64ExtraFieldValidation=true -jar RTS--setupLine2pdfPlus-1.X.X--line2pdfplus.jar`.
- Depending on the capabilities of your operating system, the Line2PDF Plus transform installer opens either using a graphical user interface or a command line.
- On non-Windows operating environments the installer uses the `/tmp` directory to unpack files and run certain scripts. If there are limitations on the `/tmp` folder of the system, such as non-exec flag or limited space, a different temporary file directory can be specified using the `-Dlax.nl.env.iatempdir=` parameter. Example: `java -Dlax.nl.env.iatempdir=/custom_temp_dir/ -jar setupLine2PDF_1.400.00.jar`.
- Follow the installation steps of the installer. During the installation process, you must specify the installation location.

### Installing a Permanent License

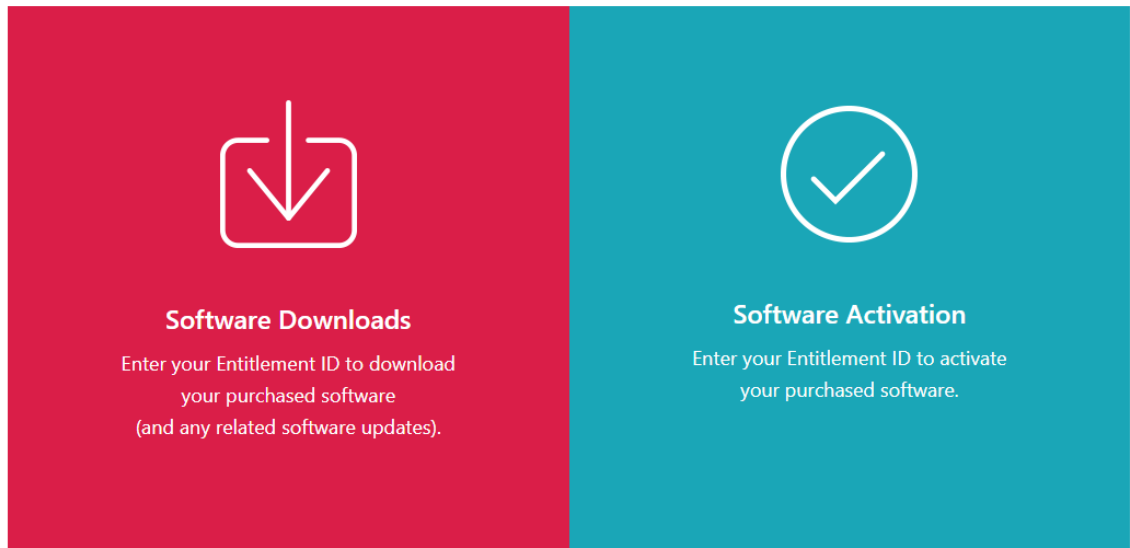
To continue using Line2PDF Plus after the trial license expires, you must install a permanent license on the computer where the product is installed. The permanent license is valid only on this computer.

To install a permanent license for Line2PDF Plus:

1. Run the license management tool `Line2PdfPlusLicenseManager.jar` located in the `license_installer` folder where Line2PDF Plus is installed, and follow the installation steps.
2. When prompted **You can either install a new license or revoke the currently installed one.**, select **Install License - Upload and apply a new license file.**
3. Make sure that you have the e-mail containing the entitlement ID (EID) that you received from Ricoh.
4. If the computer where Line2PDF Plus is installed does not have Internet access:
  1. Do not close the license application on the computer where Line2PDF Plus is installed.
  2. Log into a computer that has Internet access.
  3. Use the Remote Desktop Connection to connect to the computer where Line2PDF Plus is installed.

4. Log in with the same user name and password that you used when you started the license application.
5. On the computer that has Internet access, go to this Web site: <https://dl.ricohsoftware.com>.

What action would you like to take?



6. Click **Software Activation** on the right side of the screen.
7. In the **Software Activation** dialog, insert the EID and the system fingerprint.

A screenshot of a "Software Activation" form. The title "Software Activation" is at the top in white. Below it, a white instruction text says "Use the form below to activate your software. Enter your Entitlement ID and the System Fingerprint generated by the software." There are two input fields: the first is labeled "Enter your EID:" and the second is labeled "Enter your System Fingerprint:". Each input field is white and has a white question mark icon to its right. At the bottom center, there is a white button with the text "Confirm Content".

1. Copy and paste the EID from the e-mail you received from Ricoh.

2. Return to the license management tool on the computer where Line2PDF Plus is installed. Copy your machine fingerprint field. This action copies the 16-character system fingerprint that uniquely identifies the computer where Line2PDF Plus is installed to the clipboard.
  3. Return to the Software Activation webpage. Paste the system fingerprint in the **Enter your System Fingerprint** field.
  4. Click **Confirm Content**.
8. In the **Activation Content Confirmation** dialog:
1. Review the confirmation information.
  2. Click **Activate**.

You will receive a confirmation that your software has been activated. A license key is generated with an Activation ID for the client computer and is displayed on the screen.

 **Activation Confirmed**

Your software has been activated.

| Product Key | Product       | AID       | Quantity | Remaining Quantity |
|-------------|---------------|-----------|----------|--------------------|
| [blurred]   | Line2PDF Plus | [blurred] | 2        | 1                  |

[Download License Key](#)
[Email License Key](#)
[Copy License Key to Clipboard](#)

Your Self-service Activation ID (SSAID) is: [blurred]

[Start Over](#)

 **Note**

The number of activations of the license is displayed under **Quantity**. The remaining number of activations available for this license is displayed under **Remaining Quantity**.

9. To download the license key, click **Download License Key**. The saving procedure and file type are different for each browser. Record the folder where you saved the license key.
10. To e-mail the license key file to someone else, click **Email License Key**.

## Enter Email Address



Please enter the email address you want the license key sent to.

Email

Cancel

Send

1. Type the e-mail address.
2. Click **Send**.
11. If you are finished, close the browser tab. To restart the process, click **Start Over**.
12. If you accessed the Internet from a different computer than the one where Line2PDF Plus is installed, copy the license file to the computer where Line2PDF Plus is installed.
13. Run the license management tool on the system where Line2PDF Plus is installed, follow the installation steps and select **Install License - Upload and apply a new license file.** → **Install**.
14. After the license management tool displays your machine fingerprint, click **Next**.
15. Locate the license file and click **Open**.
16. Select **Next**.
17. Review the installation summary and click **Install**.  
You see a message that the license was installed successfully.
18. You can start using the Line2PDF transform.

## Revoking the License Key

The Self-service License Key Revoke System (SSR) is designed to permit Ricoh customers a method to move license keys between systems and recover from system failures. If you must revoke more than 2 keys from the same EID, contact your local Ricoh Support team for assistance.

To revoke the license key:

1. Run the license management tool Line2PdfPlusLicenseManager.jar located in the `license_installer` folder where Line2Pdf Plus is installed, and follow the installation steps.
2. Select the path where your transform is installed.
3. Then, select **Revoke License - Remove the current license file from the system.** and click **Install**.
4. Select the location that you want to use for your current license, then click **Next**.
5. You are instructed to visit <https://dl.ricohsoftware.com/?revoke> to revoke your license.
6. Click the **Self-Service Revoke** button.

7. Select one of the 3 available revoke methods from the **Revoke By** list:

#### **Entitlement ID (EID)**

The EID that you must revoke for the software reporting a license violation condition.

#### **Activation ID (AID)**

The AID is necessary when you only must revoke a single set of keys for 1 EID. For example, if you accidentally activated using the wrong system fingerprint and have the AID string available.

#### **License Key File Upload (license.key file)**

Best general-purpose option for resetting all EIDs installed for a specific product on a given server. You can select a **license.key** file.

8. Depending on your selection from the **Revoke By** list, enter the EID, AID, or upload the key file in the **Enter your EID**, **Enter your AID**, or **Upload Your License File (Max file size, 150 KB)** fields.
9. Enter your company name in the **Company Name** field. Make sure to use the same the company name used in the original EID email.
10. To receive the revoke details, enter your valid business email address in the **Business Email Address** field.
11. Click **Submit**.  
After 30 seconds, you receive a notification on the website. If your request could not be approved automatically and requires review, you receive an email from the reviewer within the next few business days.

#### **Note**

- Depending on the network speed or processing time, it may last up to 90 seconds until you receive the notification.
12. Return to the license management application and click **Next**.
  13. Review the summary and click **Install**.  
You will see a message that the license was successfully revoked.
  14. Click **Done**.



## 3. Running Java Version of Line2PDF Plus

- Java Command Line
- Running Java Line2PDF Plus Server
- Running Java Agent on Client Machine

To run Java on Line2PDF Plus use one of these options:

- Java command line.
- Client/Server Model.

### Java Command Line

To transform a Line data into a PDF :

1. Set CLASSPATH to include the full path of the jar file.

- For Windows:

```
set CLASSPATH=<directory>\*;
```

For example:

```
set CLASSPATH=C:\Line2pdf\*;
```

- For other operating systems:

```
export CLASSPATH="<directory>/*:"$CLASSPATH
```

For example:

```
export CLASSPATH="/Line2pdf/*:"$CLASSPATH
```

#### Note

- Setting CLASSPATH should be on a single line.
2. Run Java command. This requires a `javaline2pdf.jar` file.

### Line2PDF Plus Command Notation

Command syntax notation uses symbols to show specific conditions:

**Bar**

|

**Brackets**

[ ]

**Underlining**

—

**Ellipsis**

...

These symbols have the following meanings when used in the publications and in the online information:

- A vertical bar, |, between values means that you can only enter one of the values with the command.
- Brackets, [ ], around values indicate that they are optional.
- An ellipsis, ... , means that you can supply more than one occurrence of a keyword or value with the command.
- Underlined text identifies the default fixed value the transform uses if you do not specify a value.

## Java Line2PDF Plus Command Options

### 3

#### Command line syntax

```
java line2pdf [options] input-file output-file
```

For example:

- For Windows: `java line2pdf c:\linedata.txt c:\linedata.pdf`
- For other operating systems: `java line2pdf /linedata.txt /linedata.pdf`

or

```
java line2pdf [options] output-file < input-file
```

For example:

- For Windows: `java line2pdf c:\linedata.pdf < c:\linedata.txt`
- For other operating systems: `java line2pdf /linedata.pdf < /linedata.txt`

Options:

#### —g

Specifies an input configuration file that defines channels.

#### Usage note:

- The first line of the channel control file is [CHANNEL INFO], followed by 12 entries consisting of numbers that specify the landing line number where "Skip to channel n" should print. Default values:

```
[CHANNEL INFO]
1
7
13
19
25
31
37
43
63
49
61
```

#### —r

Replaces existing output file.

 **Note**

- The Line2PDF Plus Transform does not overwrite an existing output file by default.

To determine the outlook of the PDF file:

**—wNNN**

Specifies the width of the page to NNN. The units of this parameter are 72 units per inch.

Default value: **612**.

**—hNNN**

Specifies the height of the page to NNN. The units of this parameter are 72 units per inch.

Default value: **792**.

**—n nnn**

Specifies the lines per page to nnn.

**—s n.n**

Specifies the line spacing.

Default value: **1.0**.

**—p nn**

Specifies the font size.

Default value: **12**.

**—f fn**

Specifies a font from the following list:

- Courier
- Courier-Bold
- Courier-Oblique
- Courier-BoldOblique
- Helvetica
- Helvetica-Bold
- Helvetica-Oblique
- Helvetica-BoldOblique
- Symbol
- Times-Roman
- Times-Bold
- Times-Italic
- Times-BoldItalic
- ZapfDingbats

Default value: **Courier**.

**—b nn**

Specifies the border size. The units of this parameter are 72 units per inch.

Default value: **20**.

**—m lm tm bm**

Specifies the page margins: **lm** for left margin, **tm** for top margin and **bm** for bottom margin. The units of this parameter are 72 units per inch.

To determine the type, format and line break for the line data:

**—x nnn**

Selects the type of carriage control.

- **0**: no carriage control character
- **2**: ANSI
- **3**: ANSI with TRC
- **4**: Machine CC
- **5**: Machine CC with TRC

**—l nnn**

Specifies a fix line length, in characters or bytes, where nnn=one of [ 0 | positive number[, [char | byte]] | record ]

1. If nnn=0 (default), new line characters is applied as line break.
2. If nnn>0, each line has nnn chars or bytes. Default value is specified in chars.

For example:

—l 80,char

—l 80,byte

3. If nnn=[record | record+ | record-], variable length record apply:

The first 2 bytes of the record indicate the record length.

- If **nnn** specifies the record or record+, the record length includes the length of the first 2 bytes.
- If **nnn** specifies the record-, the record length excludes the length of the first 2 bytes.

**—a nnn**

Selects a code page or data format, where nnn=one of [ASCII|EBDIC|UTF8|UTF16|codepage number].

Default: ASCII.

- If ASCII is specified, 437 is used for the code page.
- If EBCDEC is specified, 500 is used for the code page.

**—lm nnn**

Specifies the maximum line length to convert.

Other options:

**—user pass**

Specifies the user password.

**Note**

- For an encrypted output, **—user pass** and **—pw:psca pass** options must be used together with `bcprov-jarfileversion.jar`. Make sure to add the full path of the jar file to CLASSPATH. See [Java Command Line, p. 15](#) for more information on setting CLASSPATH.

**—pw:psca pass**

Protects data with password and security flags.

**a**

Adds or modifies text annotations and interactive form fields.

**c**

Modifies the document contents.

**p**

Prints the document.

**s**

Copies the text and graphics from the document.

**—bglogo fn**

Applies the logo/preprint form, where **fn** is the PDF file name.

**Note**

- If Client and Server are running on different machines, the **fn** used with the **-bglogo** option must be a path or a file name, or both, located on the Server machine, not on the Client machine.

**—bglogo +"matrix" fn**

Applies matrix to logo/preprint form (6 numbers).

**tm1 tm2 tm3 tm4 tm5 tm6**

Specifies the linear transformation matrix values that define the origin, rotation, or scale of the appended PDF file. For example:

**1 0 0 1 ox oy**

Specifies origin changes, where:

**ox**

Specifies the distance to translate the horizontal dimension.

**oy**

Specifies the distance to translate the vertical dimension.

**sx 0 0 sy 0 0**

Specifies scaling changes, where:

**sx**

Specifies the scale factor (1.0-100%) for the horizontal direction.

**sy**

Specifies the scale factor (1.0-100%) for the vertical direction.

$\cos \theta \sin \theta - \sin \theta \cos \theta \ 0 \ 0$

Specifies rotation changes by an angle  $\theta$  counterclockwise.

The origin for this operation is the bottom left-hand corner of the page.

### —bglogo: range fn

Specifies individual pages or a range of pages to apply the logo/preprint form.

The range value can include individual page numbers or a range of pages.

- To separate pages and page ranges, use commas.
- To specify a range of pages, use a hyphen between the first and last page.  
For example: 1,150,212-240,332.

### —bglogo: range +"matrix" fn

Specifies individual pages or a range of pages to apply the matrix to logo/preprint form.

For more information, see **—bglogo +"matrix" fn** and **—bglogo: range fn**.

### Return code

**0**: if no error.

**Other numbers**: if any error occurs.

## Running Java Line2PDF Plus Server

Set CLASSPATH to include javaLine2pdf.jar.

### Command line syntax

```
java Line2PdfServer [-start] | [-stop] [-p socket_port] [-r rmi_port] [-t temp_dir]
```

For example:

- For Windows:  

```
java Line2PdfServer -start
```

or

```
java Line2PdfServer -start -p 8500 -t c:\temp
```
- For other operating systems:  

```
java Line2PdfServer -start
```

or

```
java Line2PdfServer -start -p 8500 -t /temp
```

Values:

### —start

Starts the server.

**—stop**

Stops the server.

**—p socket\_port (optional)**

Specifies the socket port number for local client.

Default value: **8500**.

**—r rmi\_port (optional)**

Specifies the RMI port number for remote Line2PdfServer.

Default value: **8501**.

**—t temp\_dir (optional)**

Specifies the temporary directory name.

Default: **<currentDir>/temp**.

**Examples for running Server****Example 1**

1. To start Line2PdfServer set these values:

**Client port:**

Default **8500**.

**RMI port:**

Default **8501**.

2. Enter the command line: `java Line2PdfServer -start`.
3. To stop Line2PdfServer enter: `java Line2PdfServer -stop`.

**Example 2**

1. To start Line2Pdf Server set these values:

**Client port: 7200.**

**RMI port: 7201.**

**Tempdir: /mydir/tmp.**

2. Enter the command line: `java Line2PdfServer -start -p 7200 -r 7201 -t /mydir/tmp`.
3. To stop Line2PdfServer enter: `java Line2PdfServer -stop -p 7200`.

**Running Java Agent on Client Machine**

Set CLASSPATH to include:

- `javaline2pdf.jar`

**Command line syntax**

**To start Line2PdfAgent:**

```
Java Line2PdfAgent -s server_host_name [-p client_port] [-sp server_rmi_port]
```

### To stop Line2PdfAgent:

```
Java Line2PdfAgent -stop [-p client_port]
```

For example: `java Line2PdfAgent -p 8500 -s C7YZV32.us.ricoh.ds -sp 8501`

Values:

#### **—p client\_port** *optional*

The port number line2pdf is connected to.

Default value: **8500**.

#### **—s server\_host\_name**

The server host name where Line2PdfServer is running.

#### **—sp server\_rmi\_port** (*optional*)

The server port number Line2PdfAgent is connected to.

Default value: **8501**.

#### **—stop**

Stop the Line2PdfAgent.

## Examples for running Agent on client machine

### Example 1

1. To start Line2Pdf Agent set these values:

#### **Client port:**

Default **8500** for C/C++ client.

**Remote host where Line2PdfServer is running: server1.**

#### **RMI port:**

Default **8501**.

2. Enter the command line: `java Line2PdfAgent -s server1.`
3. To stop Line2PdfAgent enter: `java Line2PdfAgent -stop.`

### Example 2

1. To start Line2PdfAgent set these values:

#### **Client port: 9500.**

For C/C++ client.

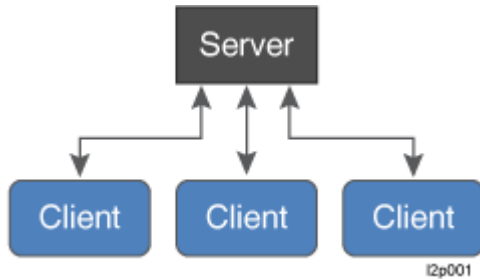
**Remote host where Line2PdfServer is running: server1.**

#### **RMI port: 7201.**

2. Enter the command line: `java Line2PdfAgent -p 9500 -s server1-sp 7201.`
3. To stop Line2PdfAgent enter: `java Line2PdfAgent -p 9500 -stop.`

## 4. Client/Server Model

- Client Native C/C++ Program
- Client and Server on the Same Machine
- Client and Server on Different Machines
- Enabling Debug Mode for Server and Agent



Client is C++ native code, while Server is Java code.

Client supports:

- Windows
- Linux
- AIX
- Sun
- zOS/USS
- zLinux

Client/Server Model topology has 2 options:

- Client and Server on the same machine.
- Client and Server on different machines.

### Client Native C/C++ Program

#### Executable Program

Windows: `line2pdf.exe`.

Other operating systems: `line2pdf`.

#### Syntax

```
line2pdf [port number] <line2pdf arguments>
```

Options:

#### **port number (optional)**

Socket port number. Default value: **8500**.

#### **<line2pdf argument options>**

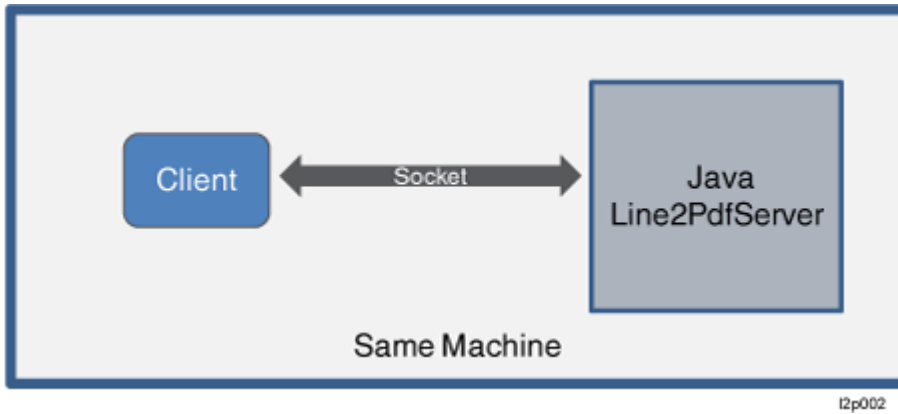
Same as Java command line.

#### Return code

**0**: if no error.

**other numbers:** if error occurs.

## Client and Server on the Same Machine

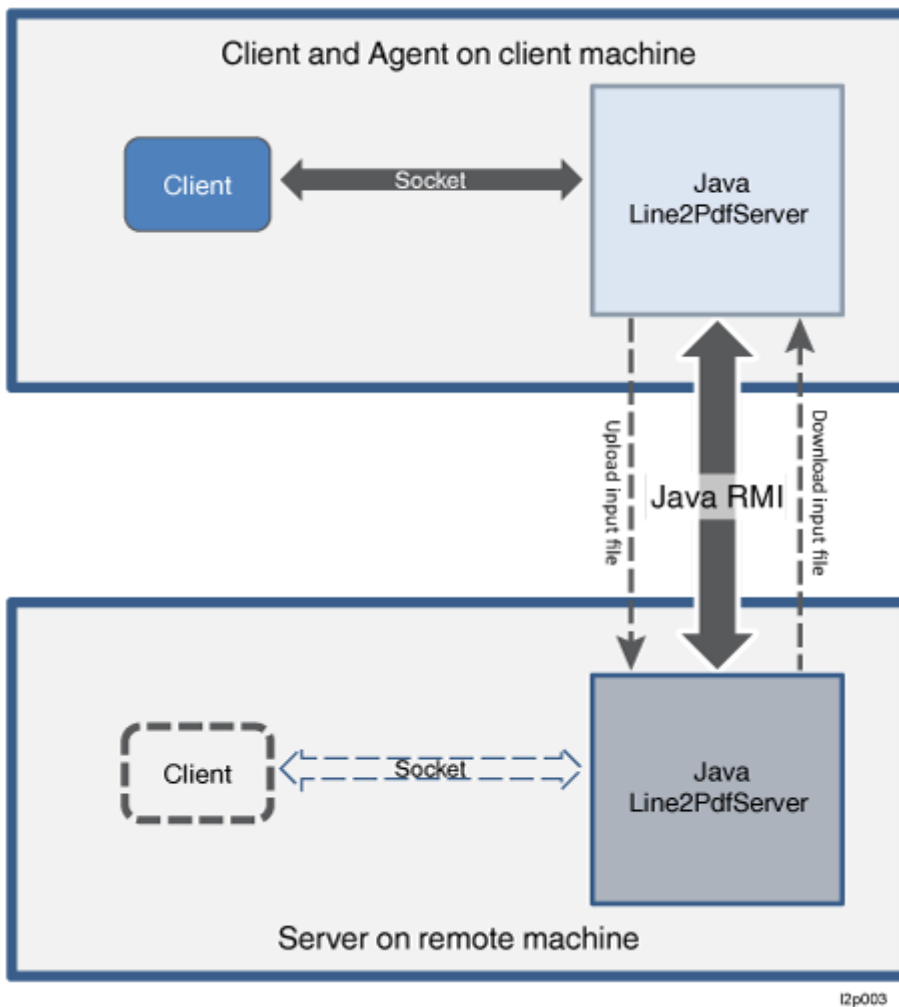


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1. Client sends the command line arguments to server through socket communication.
2. Server sends a thread to transform line data to pdf and then sends the messages back to client to indicate if completed or failed.

## Client and Server on Different Machines

The Client/Server Model with Client and Server on different machines requires that the agent Line2PdfAgent is based on the client machine.



The Client and Agent use the socket for communication, while Agent and Server use Java RMI.

The Agent redirects the client requests to remote server. The LinePdfAgent receives the messages from remote server and then redirects the received messages to the client.

The Agent uploads the input line data to the server and downloads the output PDF file from the server, if transform is completed.

## Enabling Debug Mode for Server and Agent

To turn on the debug mode on Line2PdfServer and Line2PdfAgent use a hidden flag.

Flag **—debug** must be on the first argument. When debug mode is **On** debug information is printed on the console.

Example of Line2PdfServer on debug mode:

```
java Line2PdfServer —debug —start —p 7200 —r 7201
```





